

ABSTRACT

A method for forming a plurality of MOSFETs wherein each one of the MOSFET has a unique predetermined threshold voltage. A doped well or tub is formed for each MOSFET. A patterned mask is then used to form a material line proximate each semiconductor well, wherein the width of the line is dependent upon the desired threshold voltage for the MOSFET. A tilted ion implantation is performed at an acute angle with respect to the substrate surface such that the ion beam passes through the material line. Thicker lines have a lower transmission coefficient for the ion beam and thus the intensity of the ion beam reaching the adjacent semiconductor well is reduced. By appropriate selection of the line width the dopant density in the well, and thus the final MOSFET threshold voltage, is controllable.